

Title (en)
METHOD FOR COMPENSATING PATTERN PLACEMENT ERRORS CAUSED BY VARIATION OF PATTERN EXPOSURE DENSITY IN A MULTI-BEAM WRITER

Title (de)
VERFAHREN ZUR KOMPENSATION VON DURCH VARIATION VON MUSTERBELICHTUNGSDICHTE VERURSACHTEN MUSTERPLATZIERUNGSFEHLERN IN EINEM MEHRSTRALENSCHREIBER

Title (fr)
PROCÉDÉ POUR COMPENSER DES ERREURS DE PLACEMENT DE MOTIF PROVOQUÉES PAR UNE VARIATION DE DENSITÉ D'EXPOSITION DE MOTIF DANS UN GRAVEUR À FAISCEAUX MULTIPLES

Publication
EP 3258479 A1 20171220 (EN)

Application
EP 17175033 A 20170608

Priority
EP 16174185 A 20160613

Abstract (en)
A method for compensating pattern placement errors during writing a pattern on a target in a charged-particle multi-beam exposure apparatus is presented. A layout is generated by exposing a plurality of beam field frames using a beam of electrically charged particles, wherein each beam field frame has a respective local pattern density, corresponding to exposure doses imparted to the target when exposing the respective beam field frames. During writing the beam field frames, the actual positions thereof deviate from their respective nominal positions by a placement error as a result of build-up effects within said exposure apparatus, depending on the local pattern density evolution during writing the beam field frames. To compensate this displacement, a displacement behavior model established beforehand is employed to predict the displacements; a local pattern density evolution is determined, displacements of the beam field frames are predicted based on the local pattern density evolution and the displacement behavior model, and the beam field frames are repositioned accordingly based on the predicted values.

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H01J 37/317 (2006.01); **H01J 37/304** (2006.01)

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Citation (applicant)
• US 6858118 B2 20050222 - PLATZGUMMER ELMAR [AT], et al
• US 8198601 B2 20120612 - PLATZGUMMER ELMAR [AT], et al
• US 8222621 B2 20120717 - FRAGNER HEINRICH [AT], et al
• US 7276714 B2 20071002 - PLATZGUMMER ELMAR [AT], et al

Citation (search report)
• [Y] US 2011121208 A1 20110526 - NAKAYAMADA NORIAKI [JP], et al
• [YA] EP 2950325 A1 20151202 - IMS NANOFABRICATION AG [AT]
• [A] US 2012007002 A1 20120112 - NAKAYAMADA NORIAKI [JP], et al

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DOCDB simple family (application)
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